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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-------------------------------------|-------------|----------------------|---------------------|------------------|
| 09/577,209 | 05/23/2000 | Arnoldo Valenzuela | B0843-991160 | 4200 |
| 26379 | 7590 | 07/27/2006 | EXAMINER | |
| DLA PIPER RUDNICK GRAY CARY US, LLP | | | SHAFFER, RICKY D | |
| 2000 UNIVERSITY AVENUE | | | ART UNIT | |
| E. PALO ALTO, CA 94303-2248 | | | PAPER NUMBER | |
| | | | 2872 | |

DATE MAILED: 07/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|---|--|
| Office Action Summary | Application No. 09/577,209 | Applicant(s) VALENZUELA ET AL | |
| | Examiner Ricky D. Shafer | Art Unit 2872 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 31-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 31-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-6, 8-13, 31, 33, 34, 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Korte in view of Pichel ('533) or Jochim ('469).

Korte discloses a method of manufacturing a telescope mirror comprising the steps of: (a) providing a mandrel defining the geometry of the telescope mirror, (b) depositing a reflective layer (silver or gold) on the mandrel surface, (c) electroforming a mirror body of at least nickel onto the reflective layer by an electrochemical process, (d) releasing the mirror body with the reflective layer from the mandrel (see Fig. 2), wherein the mirror body and reflective layer forms a self-supported telescope mirror due to the fact that the mirror has a thickness between 1 and 12 mm (see page 1443, column 1, lines 16-18), wherein the mandrel comprises glass or metal (Kanigen-plated aluminum), see page 1442, column 2, lines 16-18, and wherein the mandrel obviously remains unchanged due to the fact that that the mandrel can be reusable after each replication cycle (see page 1442, column 2, lines 18-21 and page 1443, column 2, lines 14-15) as well as employing the same materials as applicant, note page 1442, column 1, line 52 to page 1443, column 2, line 26, expect for explicitly stating that the electroforming process and the release process are controlled such that the building up of internal mechanical tension within the mirror body is suppressed.

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Pichel and Jochim each teach it is well known to use necessary controls (see column 4, lines 4-21 and column 3, line 73 to column 4, line 12, respectively) in the same field of endeavor for the purpose obtaining a stress free mirror.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the electroforming process and the release process of Korte to include necessary controls commonly used and employed in the art, as taught Pichel or Jochim, in order to obtain a stress-free mirror without internal mechanical tension.

As to the limitations of claim 3, Pichel and Jochim each teach it is well known to clean a surface of a mandrel (see column 2, lines 67-71 and column 3, lines 64-71 and column 2, lines 67-72 and column 3, lines 60-66, respectively) in the same field of endeavor before depositing a layer onto the surface of said mandrel.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to clean the mandrel of Korte before depositing the reflective layer, as taught Pichel or Jochim, in order to reduce surface imperfections and/or improve the adhesion strength.

As to the limitations of claim 5, it is well known and would have obvious to one of ordinary skill in the art at the time the invention was made to manufacture optic elements in a clean work environment for the purpose of preventing dust and impurities from affecting the overall optical properties of the finally produced optical elements.

As to the limitations of claims 8-11, it is well known and would have been obvious to one of ordinary skill in the art at the time the invention was made to attach a mirror body to a supporting structure either before or after releasing the mirror body from a mandrel for the

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purpose reinforcing and/or increasing the rigidity of the mirror body before the mirror body is removed from the mandrel or mounting the mirror body to a mounting (supporting) structure of a telescope.

3. Claims 2, 32 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Korte in view of Pichel ('533) or Jochim ('469) as applied to claims 1, 3-6, 8-13, 31, 33, 34, 36 and 37 above and further in view of George et al ('944) or Vaaler ('376).

Korte in view of Pichel or Jochim discloses all of the subject matter claimed, note the above explanation, except for explicitly stating that the an internal mechanical tension is measured during the electroforming process using an additional electroforming sample which is electroformed in parallel or an electronic stress measurement device.

George et al and Vaaler each teach it is well known to use a stress measurement device in the same field of endeavor for the purpose monitoring and controlling the internal stress produced during the electroforming process.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the electroforming apparatus of Korte in view of Pichel or Jochim to include a stress measurement device, as taught by George et al or Vaaler, in order to monitor and control the internal stress produced during the electroforming process so as to obtain an uniform stress free deposition.

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Korte in view of Pichel ('533) or Jochim ('469) as applied to claims 1, 3-6, 8-13, 31, 33, 34, 36 and 37 above, and further in view of Engelhaupt et al ('611).

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Korte in view of Pichel or Jochim discloses all of the subject matter claimed, note the above explanation, except for explicitly stating that the electroforming step is carried out using an electrochemical liquid having a temperature between 40 degrees Celsius and 70 degrees Celsius.

Engelhaupt et al teaches it is known to use an electrochemical liquid having a bath temperature between 40 degrees Celsius and 70 degrees Celsius in the same field of endeavor for the purpose controlling the internal stress produced during the electroforming process.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the bath of the electroforming apparatus of Korte in view of Pichel or Jochim to include a temperature between 40 degrees Celsius and 70 degrees Celsius, as taught by Engelhaupt et al, in order to control the internal stress produced during the electroforming process so as to obtain an uniform stress free deposition.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

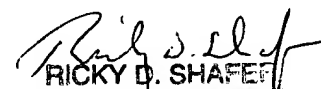
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ricky D. Shafer whose telephone number is (571) 272-2320.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RDS

July 23, 2006


RICKY D. SHAFER
PATENT EXAMINER
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